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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,223	08/31/2006	Roger John Leach	COLGRA P68AUS	7816
20210 7590 09/15/2011 DAVIS & BUJOLD, P.L.L.C. 112 PLEASANT STREET CONCORD, NH 03301			EXAMINER KHATRI, PRASHANT J	
			ART UNIT 1783	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/591,223	<b>Applicant(s)</b> LEACH, ROGER JOHN	
	<b>Examiner</b> PRASHANT J. KHATRI	<b>Art Unit</b> 1783	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2011.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 5) ☒ Claim(s) 27,28,30-38,40 and 42-50 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☒ Claim(s) 40-44,47 and 48 is/are allowed.
- 7) ☒ Claim(s) 27,28,30-32,37,45,46,49 and 50 is/are rejected.
- 8) ☒ Claim(s) 33-36 is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

In response to RCE filed 7/13/2011. Claims 27-28, 30-38, 40, and 42-50 are pending.

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/13/2011 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 32, 45-46, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muthiah et al. (***US 6218483***) in view of Luski et al. (***US 20030079369***) and Horinka (***article***).

4. Muthiah et al. disclose a powder coated heat sensitive substrate. While it is noted that Muthiah disclose a wood substrate, it is noted that a glass substrate can be

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used in the same process (**abstract; col. 5, lines 9-39**). Concerning the process as claimed in claims 45 and 50, Muthiah discloses a substrate on a flat line conveyer wherein said substrate would inherently have a upper and lower surface wherein a thermosetting powder is deposited upon an exposed face wherein the exposed face is equivalent to an upper surface (**col. 6, lines 1-16**). The coated substrate is then conveyed to a curing oven having several heating zones that are heated by IR lamps wherein the line speed can be adjusted based upon the curing temperatures (**col. 6, lines 16-35**). Concerning claim 32, it is noted that the temperatures of the curing oven can be adjusted for proportional curing times (**col. 6, lines 56-57**). As shown by Horinka, wavelength is inversely proportional to frequency; therefore, at longer wavelengths, the frequency would be lower and at shorter wavelengths, the frequency would be higher. Furthermore, as disclosed by prior art low energy is equivalent to low temperatures and high energy to high temperatures (**p. 1**). Prior art additionally discloses that some systems may have controls whereby the voltage may be adjusted (**p. 2**). Examiner takes the position that controlling voltage would thereby control the energy disposed.

Regarding claim 46, it is noted that the substrate can be preheated in order for the powder to reach flow faster and therefore lower curing times. However, Muthiah is silent to the presently claimed heating from a lower surface of the substrate.

5. Luski et al. disclose a process and apparatus for drying a film layer. Concerning the limitation of heating the glass from the second surface, Luski discloses forming a coating on a carrier substrate wherein the film layer is deposited and dried in a plurality

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of stages (**abstract; para. 0016-0021, 0042, 0045; FIG. 1**). Examiner notes that the film material may be comprised of a thermosetting material (**para. 0048-0055**). Luski discloses the carrier substrate and coating layer thereof wherein the coating layer wherein heating dries the layer from the bottom to the top and can be done by means of IR, heat lamps, and the like (**para. 0062**). Luski discloses that different compositions will have different drying requirements and one of ordinary skill in the art would know how to adjust the process accordingly (**para. 0046**). As such, Examiner takes the position that since the process of heating is the same as that presently claimed, the combination of Muthiah and Luski would inherently provide for the curing by means of conduction of the heat from the bottom to the top since glass is a known thermal conductor and heat rises from the bottom to the top. Further, it is noted that the temperature, volume, velocity, and direction of the air produced can be controlled (**para. 0066-0068**). As such, one of ordinary skill in the art would have been able to optimize the temperature including the presently claimed "near-ambient temperature above the glass substrate" by routine experimentation. The process of heating from the second surface of the substrate carrier allows for uniform formation of the coating by eliminating the "skin effect" caused by fast drying methods and as a result, producing a coating that has little or no surface defects (**para. 0055, 0062-0066**).

6. However, note that while Luski et al. do not disclose all the features of the present claimed invention, Luski et al. is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re*

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*Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, namely, heating from the second surface of a substrate carrier in order to form uniform coatings that do not have the "skin effect" and other surface defects formed by the coating and in combination with the primary reference, discloses the presently claimed invention.

7. All of the elements were known within the art. The only difference is a single disclosure containing all of the presently claimed elements. Muthiah et al. disclose a powder coated heat sensitive substrate. While it is noted that Muthiah disclose a wood substrate, it is noted that a glass substrate can be used in the same process. However, Muthiah et al. are silent to heating the glass substrate from the second surface. Luski et al. disclose a process and apparatus for drying a film layer upon a substrate carrier. The motivation to combine the above references is drawn towards the method forming uniform coatings by eliminating the "skin effect" caused by faster drying methods and as a result, a coating that has little or no surface defects. Thus, it would have been obvious to one of ordinary skill in the art to apply the method as shown by Luski in order to produce coatings that do not have the "skin effect" and therefore, a uniform coating that has little or no defects.

8. Claims 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muthiah et al. (**US 6218483**) in view of Luski et al. (**US 20030079369**) and Horinka (**article**) as applied to claim 45 above, and further in view of Gerhardinger et al. (**US 5714199**).

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9. Muthiah, Luski, and Horinka disclose the above but are silent to the use of treating the surface of the substrate prior to deposition or the use of an adhesion promoter in the composition.

10. Regarding claims 27-28, Gerhardinger et al. disclose the use of a silane may be included within the powder (**col. 5, lines 19+**) or sprayed on prior to the application of the pre-polymer powder (**col. 9, lines 29+**). Providing an adhesion-promoting layer or an adhesion promoter in the composition allows for improve adhesion between the organic coating and the inorganic substrate such as glass. Thus, it would have been obvious to one of ordinary skill in the art to use an adhesion-promoter such as a silane in order to improve adhesion between layers.

11. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muthiah et al. (**US 6218483**) in view of Luski et al. (**US 20030079369**) and Horinka (**article**) as applied to claim 45 above, and further in view of Bassett, Jr. (**US 3355574**).

12. Muthiah, Luski, and Horinka disclose the above but are silent to the presently claimed source mounted in a box with a reflective thermal internal surface and conduction thereof from the box.

13. Bassett, Jr. discloses an electrical surface heater including a plurality of source lamps (**abstract**). Concerning the presently claimed box (**FIG. 2; col. 3, lines 60-75**), it is noted that box contains a reflective internal surface (**element 37**) and infrared source lamps (**elements 30, 32, 34, and 36; col. 3, lines 1-29**). The heat is transmitted from the elements and reflected up through the top plate (**col. 3, lines 60-75; col. 4, lines 1-**

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**34).** The electrical surface heater as shown by Bassett, Jr. is to reduce the thermal lag and heat utensils at a faster rate (**col. 4, lines 15-34**). Thus, in order to provide heating at a faster rate, one of ordinary skill in the art would have applied the electrical surface heater of Bassett, Jr. as the heat sources of Luski.

14. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Muthiah et al. (**US 6218483**) in view of Luski et al. (**US 20030079369**) and Horinka (**article**) as applied to claim 45 above, and further in view of Leach (**US 6599576**).

15. Muthiah, Luski, and Horinka disclose the above but are silent to the use of two thermosetting powder layers.

16. Leach discloses the use of two separate thermosetting layers whereby both are cured at the same time (**col. 2, lines 31-43**). The application of multiple thermosetting layers is for aesthetic purposes. Thus, it would have been obvious to one of ordinary skill in the art to apply at least two thermosetting layers and curing said layers.

17. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Muthiah et al. (**US 6218483**) in view of Luski et al. (**US 20030079369**) and Bassett, Jr. (**US 3355574**) with evidence from De Jong et al. (**Book**).

Muthiah et al. disclose a powder coated heat sensitive substrate. While it is noted that Muthiah disclose a wood substrate, it is noted that a glass substrate can be used in the same process (**abstract; col. 5, lines 9-39**). Concerning the process as claimed in claim 50, Muthiah discloses a substrate on a flat line conveyer wherein said



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substrate would inherently have an upper and lower surface upon which a thermosetting powder is deposited upon an exposed face wherein the exposed face is equivalent to an upper surface (**col. 6, lines 1-16**). The coated substrate is then conveyed to a curing oven having several heating zones that are heated by IR lamps wherein the line speed can be adjusted based upon the curing temperatures (**col. 6, lines 16-35**).

However, Muthiah is silent to the presently claimed heating from a lower surface of the substrate and box for said infrared radiation source.

18. Luski et al. disclose a process and apparatus for drying a film layer. Concerning the limitation of heating the glass from the second surface, Luski discloses forming a coating on a carrier substrate wherein the film layer is deposited and dried in a plurality of stages (**abstract; para. 0016-0021, 0042, 0045; FIG. 1**). Examiner notes that the film material may be comprised of a thermosetting material (**para. 0048-0055**). Luski discloses the carrier substrate and coating layer thereof wherein the coating layer wherein heating dries the layer from the bottom to the top and can be done by means of IR, heat lamps, and the like (**para. 0062**). Luski discloses that different compositions will have different drying requirements and one of ordinary skill in the art would know how to adjust the process accordingly (**para. 0046**). As such, Examiner takes the position that since the process of heating is the same as that presently claimed, the combination of Muthiah and Luski would inherently provide for the curing by means of conduction of the heat from the bottom to the top since glass is a known thermal conductor and heat rises from the bottom to the top. Further, it is noted that the temperature, volume, velocity, and direction of the air produced can be controlled (**para.**

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**0066-0068**). As such, one of ordinary skill in the art would have been able to optimize the temperature including the presently claimed "near-ambient temperature above the glass substrate" by routine experimentation. The process of heating from the second surface of the substrate carrier allows for uniform formation of the coating by eliminating the "skin effect" caused by fast drying methods and as a result, producing a coating that has little or no surface defects (**para. 0055, 0062-0066**).

19. Bassett, Jr. discloses an electrical surface heater including a plurality of source lamps (**abstract**). Concerning the presently claimed box (**FIG. 2; col. 3, lines 60-75**), it is noted that box contains a reflective internal surface (**element 37**) and infrared source lamps (**elements 30, 32, 34, and 36; col. 3, lines 1-29**). The heat is transmitted from the elements and reflected up through the top plate (**col. 3, lines 60-75; col. 4, lines 1-34**). The top plate is comprised of Vycor® (**col. 2, lines 60-72**), which as evidenced by De Jong is a borosilicate glass (**De Jong; pp. 16-17**). The electrical surface heater as shown by Bassett, Jr. is to reduce the thermal lag and heat utensils at a faster rate (**col. 4, lines 15-34**). Thus, in order to provide heating at a faster rate, one of ordinary skill in the art would have applied the electrical surface heater of Bassett, Jr. as the heat sources of Luski.

20. All of the elements were known within the art. The only difference is a single disclosure containing all of the presently claimed elements. Muthiah et al. disclose a powder coated heat sensitive substrate. While it is noted that Muthiah disclose a wood substrate, it is noted that a glass substrate can be used in the same process. However, Muthiah is silent to the presently claimed heating from a lower surface of the substrate

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and box for said infrared radiation source. Luski et al. disclose a process and apparatus for drying a film layer upon a substrate carrier. The motivation to combine the above references is drawn towards the method forming uniform coatings by eliminating the "skin effect" caused by faster drying methods and as a result, a coating that has little or no surface defects. Thus, it would have been obvious to one of ordinary skill in the art to apply the method as shown by Luski in order to produce coatings that do not have the "skin effect" and therefore, a uniform coating that has little or no defects. The electrical surface heater as shown by Bassett, Jr. is to reduce the thermal lag and heat utensils at a faster rate. Thus, in order to provide heating at a faster rate, one of ordinary skill in the art would have applied the electrical surface heater of Bassett, Jr. as the heat sources of Luski.

### ***Allowable Subject Matter***

21. Claims 40-44, 47, and 48 allowed. The prior art of Boucher and Storrs as cited in OA 8/19/2010 do not fairly teach the present foil at the presently claimed dimensions.

22. Claims 33-36 and 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Response to Arguments***

23. Applicant's arguments with respect to the above claims have been considered but are moot in view of the new ground(s) of rejection. Examiner notes, however, that

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Gerhardinger is still applicable in teach the use of adhesion promoters in powder coatings and for glass substrates.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRASHANT J. KHATRI whose telephone number is (571)270-3470. The examiner can normally be reached on M-F 9:00 A.M.-5:00 P.M. (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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/David R. Sample/  
Supervisory Patent Examiner, Art Unit 1783

PRASHANT J KHATRI  
Examiner  
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/P. J. K./  
Examiner, Art Unit 1783